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| 08/997,774  | 12/24/1997  | SHAU-LIN F. CHEN     | 3940/3928           | 1736             |
| 7590  | 01/21/2004  |                      | EXAMINER            |                  |
| ENGELHARD CORPORATION<br>101 WOOD AVENUE<br>P O BOX 770<br>ISELIN, NJ 088300770 |             |                      | TRAN, BIEN THI      |                  |
|   |             |                      | ART UNIT            | PAPER NUMBER     |
|   |             |                      | 1764                | 27               |

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**BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES**

Paper No. 27

Application Number: 08/997,774

Filing Date: December 24, 1997

Appellant(s): CHEN ET AL.

**MAILED**

JAN 21 2004

Richard A. Negin  
For Appellant

**GROUP 1700**

**Supplemental EXAMINER'S ANSWER**

This is in response to the appeal brief filed 10/02/01.

**(1) *Real Party in Interest***

A statement identifying the real party in interest is contained in the brief.

**(2) *Related Appeals and Interferences***

A statement identifying the related appeals and interferences which will directly affect or be directly affected by or have a bearing on the decision in the pending appeal is contained in the brief.

**(3) *Status of Claims***

The statement of the status of the claims contained in the brief is correct.

**(4) *Status of Amendments After Final***

The appellant's statement of the status of amendments after final rejection contained in the brief is incorrect. There is no amendment filed on 08/28/01. The amendment after final rejection filed on 10/02/01 has been entered.

**(5) *Summary of Invention***

The summary of invention contained in the brief is correct.

**(6) *Issues***

The appellant's statement of the issues in the brief is correct. However, upon reconsideration, the following rejections have been withdrawn:

112 issue; and

art rejections in which the primary reference is Abe et al (5,538,697), or EP '963 or EP '581 or WO '244.

**(7) *Grouping of Claims***

Appellant's brief includes a statement that the claims stand or fall together.

**(8)      *ClaimsAppealed***

The copy of the appealed claims contained in the Appendix to the brief is correct.

**(9)      *Prior Art of Record***

|                     |                    |                |
|---------------------|--------------------|----------------|
| <b>WO 97/00119</b>  | <b>DETTLING</b>    | <b>01/1997</b> |
| <b>EP 747,581</b>   | <b>FROST et al</b> | <b>12/1996</b> |
| <b>EP 602,963</b>   | <b>ABE et al</b>   | <b>06/1994</b> |
| <b>US 5,218,817</b> | <b>URATA</b>       | <b>06-1993</b> |
| <b>US 5,078,979</b> | <b>DUNNE</b>       | <b>01-1992</b> |
| <b>US 3,675,398</b> | <b>GIARRIZZO</b>   | <b>07-1972</b> |

**(10)    *Grounds of Rejection***

The following ground(s) of rejection are applicable to the appealed claims:

***Claim Rejections - 35 USC § 102***

1.      The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1.      Claims 1-2, 10-11, (17-19)/1 are rejected under 35 U.S.C. 102(b) as being anticipated by WO 97/00119.

WO 97/00119 discloses a catalytic reactor system comprising:

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a catalyst comprising a platinum group metal component dispersed on a refractory support carrier;

a hydrocarbon adsorbent deposited on a refractory carrier (page 6, lines 10-22).

The gas temperature is between 200-400 °C (page 30, line 5).

With respect to claims 2, 10-11, (18-19)/17/1, and the newly added limitation in claim 1, WO 97/00119 discloses that the catalyst and adsorbent are disposed in separated layers or same layers deposited on the cell walls of a honeycomb configuration (page 19, lines 2-10).

With respect to claim 17/1, WO 97/00119 discloses the specific amount of platinum group metal of 1-200 g/ft<sup>3</sup> (page 12, lines 10-11, page 14, lines 4-7).

Instant claims 1-2, 10-11, (17-19)/1 structurally read on the apparatus of WO 97/00119.

***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. The factual inquiries set forth in *Graham v. John Deere Co.*, 148 USPQ 459, that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or

unobviousness.

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4. Claims 3-4, 8-9, 12-15, (17-19)/(3-4) are rejected under 35 U.S.C. § 103 as being unpatentable over WO 97/00119 in view of Urata (5,218,817) and Giarrizzo (3,675,398).

The apparatus of WO 97/00119 is substantially the same as that instantly claimed, but is silent as to whether the catalyst may be placed in the tail pipe or the muffler.

However, Urata and Giarrizzo show the conventionality of positioning the catalyst in the muffler and tail pipe.

It would have been obvious to one having ordinary skill in the art to select an appropriate location for the catalyst, such as at the muffler and tail pipe as taught by Urata and Giarrizzo in the apparatus of WO 97/00119 to achieve the purification attendant therewith and since it has been held that rearranging parts of an invention involves only routine skill in the art. *In re Japikse*, 86 USPQ 70.

5. Claims 5, (17-19)/5 are rejected under 35 U.S.C. § 103 as being unpatentable over WO 97/00119 in view of Dunne (5,078,979).

The apparatus of WO 97/00119 is substantially the same as that instantly claimed, but is silent as to the specific properties of the adsorbent as claimed.

However, Dunne shows the conventionality of providing an adsorbent having specific properties as claimed.

It would have been obvious to one having ordinary skill in the art to select an appropriate adsorbent, as taught by Dunne in the apparatus of WO 97/00119, if not inherent therein, to achieve the desired benefits of adsorbing HC since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416.

6. Claim 6 is rejected under 35 U.S.C. § 103 as being unpatentable over WO 97/00119 in view of EP 602,963.

The apparatus of WO 97/00119 is substantially the same as that instantly claimed, but fails to disclose whether an additional, upstream catalyst may be provided.

However, EP 602,963 show the conventionality of providing an additional, upstream catalyst.

It would have been obvious to one having ordinary skill in the art to provide an additional, upstream catalyst in the apparatus of WO 97/00119 as taught by EP 602,963 to further purify the exhaust gas thereof.

7. Claim 7 is rejected under 35 U.S.C. § 103 as being unpatentable over either WO 97/00119 in view of Dunne (5,078,979) as applied to claim 5 above and further in view of EP 602,963.

The same comments with respect to EP 602,963 apply.

8. Claim 20/(1) are rejected under 35 U.S.C. § 103 as being unpatentable WO 97/00119 as applied to claims 1-2 above and further in view of EP 747,581.

WO 97/00119 is silent as to the specific light-off temperature of the catalyst.

However, the catalyst of WO 97/00119 is the same as that of the instant claim and therefore must has the same properties, i.e. the same light-off temperature.

In any event, EP 747,581 discloses provision of a catalyst having light-off temperature at 92 °C.

It would have been obvious to one having ordinary skill in the art to substitute the catalyst of EP 747,581 for the catalyst of WO 97/00119 for the known and expected results of

obtaining result in exhaust gas purification in the absence of unexpected results, and since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416.

9. Claim 20/(3-4) are rejected under 35 U.S.C. § 103 as being unpatentable WO 97/00119 in view of Urata (5,218,817) and Giarrizzo (3,675,398) as applied to claims 3-4 above and further in view of EP 747,581.

The same comments with respect to EP '581 apply.

10. Claim 20/(5) are rejected under 35 U.S.C. § 103 as being unpatentable over WO 97/00119 in view of Dunne (5,078,979) as applied to claim 5 above and further in view of over EP 747,581.

The same comments with respect to EP '581 apply.

**(11) *Response to Argument***

In several locations in the brief, Appellants urge that:

1) Appellants argue that the WO '119 reference does not disclose that a low temperature catalyst located downstream of the engine is never exposed to a temperature in excess of 550 °C.

Such contention is not persuasive as the WO '119 reference does disclose that the operating temperature of the catalyst of from 150-500 °C (see, for example, Table 4). From such disclosure, the catalyst of WO '119 must be at the location so as the catalyst inlet temperature falls within the operating range.

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2) Appellants argue that although WO '119 discloses that the gas inlet temperature of between 200-400 °C, the conversion of HC at 200 °C is very low during this range (Table 2) which is contrary to the use of a low temperature conversion catalyst in the instant invention which has a light-off temperature of less than 200 °C.

Such contention is not persuasive since in Table 4 of WO '119 shows that the conversions of HC at 150 °C and 200 °C are in the range from 48-92% depending on the specific catalyst. Therefore such catalyst meets the "low light-off temperature catalyst" of the instant claim.

3) Appellants argue that the secondary references of Urata, Giarrizzo, Dunne, EP '963 do not disclose the temperature or other conditions to which the catalyst is exposed, e.g. location of the catalyst so as to never exposed to a temperature in excess of about 550 °C.

Such contention is not persuasive as the primary reference, WO '119, is relied upon for such teaching.

It should be noted that, the secondary reference, Dunne, is relied upon for teaching a specific property of the adsorbent. EP '963 is relied upon for teaching providing a second upstream catalyst. Urata and Giarrizzo are only relied upon for teaching the specific location, e.g. tailpipe or muffler position which is further away from the engine. Therefore, the catalyst located at these locations will never be exposed to high temperature.

In the reply brief filed 2/19/02, Appellants urge that:

a) there is new ground of rejection. Such contention is not persuasive as upon reconsideration, the 102 rejections are withdrawn, except the 102 with respect to WO '119. The rejection based on WO '119 is not new.

b) WO '119 does not disclose that the catalyst is never exposed to a temperature in excess of 550 °C. Such contention is not persuasive as the catalyst in WO '119 is exposed to temperature of 100-530 °C (page 32). WO '119 also discloses that the gas temperature is between 200-400 °C (page 30, line 5).

**(12) Conclusion**

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

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Primary Examiner  
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HT  
January 12, 2004

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